(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



10/519547

(43) International Publication Date 8 January 2004 (08.01.2004)

PCT

(10) International Publication Number WO 2004/003629 A1

(51) International Patent Classification7:

G02B 27/18

(21) International Application Number:

PCT/KR2003/001018

(22) International Filing Date:

23 May 2003 (23.05.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 10-2002-0036851

28 June 2002 (28.06.2002) KR

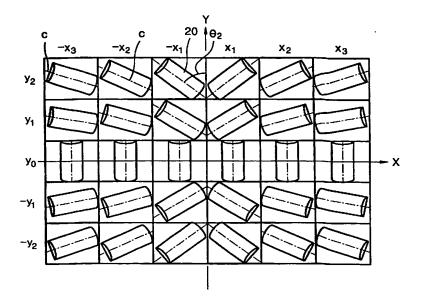
- (71) Applicant (for all designated States except US): SAM-SUNG ELECTRONICS CO., LTD. [KR/KR]; 416 Maetan-dong, Paldal-gu, Suwon-city, 442-373 Kyungki-do (KR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): KIM, Dae-Sik [KR/KR]; 824-706 Wooseong Apt., 973-3, Youngtong-dong, Paldal-gu, Suwon-si, 442-470 Gyeonggi-do (KR). CHO, Kun-Ho [KR/KR]; 103-106 Doosan Donga Apt. 1199-1, Gwonseon-dong, Gwonseon-gu, Suwon-si, 441-390 Gyeonggi-do (KR). LEE, Hee-Joong [KR/KR];

605-1105 Satbyul Hanyang Apt. 1109, Dalan-dong, Dongan-gu, Anyang-si, 431-058 Gyeonggi-do (KR). KIM, Tae-Hee [KR/KR]; c/o Samsung Electronics Co., Ltd., 416 Maetan 3-dong, Paldal-gu, Suwon-si, 442-373 Gyeonggi-do (KR).

- (74) Agent: LEE, Young-Pil; The Cheonghwa Building, 1571-18, Seocho-dong, Seocho-gu, Seoul 137-874 (KR).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: CYLINDER LENS ARRAY AND PROJECTION SYSTEM EMPLOYING THE SAME



(57) Abstract: A cylinder lens array and a projection system adopting the same are provided. The cylinder lens array is installed on a path of a light beam emitted from a light source and is comprised of lens cells. The lens cells are arrayed with their central axes inclined at different angles, so that the light beam which diverges symmetrically with respect to its optical axis is aligned so as to reduce the angle of the divergence in a certain direction. The cylinder lens array is applicable to both single-panel projection systems and three-panel projection systems. In particular, when the cylinder lens array is applied to projection systems adopting a scrolling method, the effects of light alignment are maximized. Thus, etendue decreases, and light efficiency increases.

